

# Manufacturing KPIs

KPI	Formula	Definition
Capacity Utilization Rate	$(\text{Actual Output} / \text{Potential Output}) \times 100$	This measures how much of your available capacity you are actually using on your production line.
Overall Equipment Effectiveness (OEE)	Availability x Performance x Quality	A measure of how well a manufacturing operation is utilized (facilities, time, and material) compared to its full potential, during the periods when it is scheduled to run.
Machine Downtime	Machine Down Time / Actual Run Time	Downtime is the leading source of lost production time. Losing production time means less products, less sales, or not meeting deadlines for orders. Some downtime can be planned for: maintenance, setups, shift changes, etc.
Unplanned Machine Downtime	Unplanned Machine Down Time / Actual Run Time	Unplanned Downtime is any unforeseen event that reduces return on investment by causing disruptions in quality, cost and cycle time. When unplanned downtime occurs, no value is being produced but the cost of overhead operations continues to grow, which directly impacts a company's bottom line.
Quality Control	First Pass Yield = # of products with no defects / Total # of products produced Rework = # of products reworked / Total # of products produced Scrap = # of products scrapped / Total # of products produced	Shows the percentage of manufacturing quality. The higher the First Pass Yield (items produced with no defects the first time) the better. If they sell multiple products this KPI can be used in total or broken down by product line.
Failed Audits	# of Failed Audits / Total # of Audits	Product audits take place after manufacturing is complete, but before the product reaches the customer. This is to ensure that the customer gets the quality product they paid for. The goal is to reduce the number of failed audits.
Customer Returns	# of returned items / # of items sold	This shows the percentage of returns and since returns are usually a major cost/expense it is important to track.
Contribution Margin per Unit	Revenue per Unit - Variable Costs per Unit	The selling price per unit minus the variable cost per unit. "Contribution" represents the portion of sales revenue that is not consumed by variable costs and so contributes to the coverage of fixed costs.
Break Even Point	Total Fixed Costs/Contribution Margin per Unit	The level of production at which the costs of production equal the revenues for a product.

Days to Inventory Turn	$(\text{COGS}/\text{Average Inventory during period}) \times \text{\# days in period}$	Tells us how fast we are selling inventory.(Compare this to how fast you have to pay your supplier)
Gross Margin Return On Inventory (GMROI)	$(\text{Gross Profit } \$ / \text{Average Inventory})$	GMROI shows how much profit inventory sales produce after covering inventory costs. A higher GMROI is generally better, as it means each unit of inventory is generating a higher profit. The recommend GMROI is $\geq 3.2$
Cash Conversion Cycle	$\text{CCC} = \text{DIO} - \text{DPO} + \text{DSO}$ $\text{Days Inventory Outstanding} = \text{Avg Inventory} / (\text{COGS} / \text{\#days})$ $\text{Days Payable Outstanding} = \text{Avg Inventory} / (\text{COGS} / \text{\#days})$ $\text{Days Sales Outstanding} = \text{AR} / \text{Sales} \times \text{\#Days}$	A metric that expresses the time (measured in days) it takes for a company to convert its investments in inventory and other resources into cash flows from sales. Also called the Net Operating Cycle or simply Cash Cycle, CCC attempts to measure how long each net input dollar is tied up in the production and sales process before it gets converted into cash received.
Breakage/Spoilage	$\text{Raw Materials deemed broken or spoiled} / \text{Total amount of Raw materials}$	The percentage of raw material or WIP lost during production stages
Sell Through Rate	$(\text{\#units sold} / \text{beginning inventory}) \times 100$	Tells you how much inventory you are selling each month
Current Ratio	$\text{Current Assets} / \text{Current Liabilities}$	A liquidity ratio that measures a company's ability to pay short-term obligations or those due within one year. It tells investors and analysts how a company can maximize the current assets on its balance sheet to satisfy its current debt and other payables.
Quick Ratio	$(\text{Current Assets} - \text{Inventory}) / \text{Current Liabilities}$	A financial indicator of short-term liquidity or the ability to raise cash to pay bills due in the next 90 days.

**For a review of your KPIs, [contact us](#) for a free consultation!**